PB87-190047

Superfund Record of Decision (EPA Region 2)
Vestal Water Supply Well 1-1
Vestal, Broome County, New York

(U.S.) Environmental Protection Agency
Washington, DC

27 Jun 86

U.S. Department of Commerce
National Technical Information Service
NTIS

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Agency

Office of
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EPA/ROD/R02-86/026
June 1986

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EPA

Superfund Record of Decision:

Vestal Water Supply Well 1-1, NY

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TECHNICAL REPORT DATA (Please read Instructions on the reverse before completing)		
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		14. SPONSORING AGENCY CODE 800/00
15. SUPPLEMENTARY NOTES		

16. ABSTRACT

The Vestal Water Supply Well 1-1 is located in the Town of Vestal, Broom County, NY on the south bank of the Susquehenna River with an industrial park immediately to the southeast of the well, and several marsh areas and drainage ditches encompassing and interlacing the industrial park. Well 1-1 is one of three production wells in Water District 1 intended to provide drinking water to several water districts in the Vestal area. In 1978 a chemical spill at the IBM plant in Endicott, a town across the Susquehenna River, led to a testing program for all drinking wells in the vicinity for synthetic compounds. As a result of this testing, significant concentrations of chlorinated solvents were discovered in well 1-1, and the well pumpage was diverted to the Susquehenna River where it presently continues to discharge under a SPDES permit. Subsequent investigation has since indicated that the presence of chlorinated solvents in the well is not related to the spill at the IBM plant. In late 1982 an investigation, contracted by the Town of Vestal, implicated, in part, the area around the southeast corner of Stage Road as a suspected source. This is an area which borders with the industrial park along Stage Road. In July 1985 the EPA rejected a FFS recommendation to construct a large capacity water main between Water Districts 1 and 5 in order to improve the reliability of the District 1 supply. This recommendation was rejected because the agency believed that a sufficient capacity of good quality water

(See Attached Sheet)

17. KEY WORDS AND DOCUMENT ANALYSIS		
a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Record of Decision Vestal Water Supply Well 1-1, NY Contaminated Media: gw Key contaminants: VOCs, TCE, chlorinated solvents		
18. DISTRIBUTION STATEMENT	19. SECURITY CLASS (This Report) None	21. NO. OF PAGES 51
	20. SECURITY CLASS (This page) None	22. PRICE

EPA Form 2220-1 (Rev. 4-77) PREVIOUS EDITION IS OBSOLETE

16. ABSTRACT (continued)

still existed for the service area, and that no short-term threat of losing this capacity was present. The primary contaminants of concern include: VOCs, TCE.

The selected remedial action includes: restoration of District 1 water supply capacity to the level that existed prior to loss of well 1-1; provision of a water supply to the district that exceeds applicable or relevant and appropriate standards, thereby providing a very high level of public health protection; hydraulic containment of the plume of contaminants via pumping well 1-1, thereby protecting other District 1 water supply wells; cessation of untreated discharge from well 1-1 to the Susquehenna River. The estimated capital cost is $389,400 with annual O&M costs of $119,750.

RECORD OF DECISION

REMEDIAL ALTERNATIVE SELECTION

SITE: Vestal Water Supply Well 1-1, Vestal, Broome County, New York

DOCUMENTS REVIEWED

I am basing my decision primarily on the following documents describing the analysis of cost effectiveness of remedial alternatives for this site:

- Well Field Contamination Investigation (R.J. Martin)
- Vestal Water Supply Well 1-1 Focused Feasibility Study
- Vestal Water Supply Well 1-1 Remedial Investigation/ Feasibility Study
- Staff Summaries, Letters and Recommendations
- Responsiveness Summary

DESCRIPTION OF SELECTED REMEDY

This Record of Decision calls for the following actions:

- Construction of a packed column air stripping system on well 1-1 in order to return the well to full service as Vestal Water District 1's primary water supply. This cost effective alternative will have the following positive impacts:

  1) restoration of District 1 water supply capacity to the level that existed prior to loss of well 1-1;

  2) provision of a water supply to the district that exceeds applicable or relevant and appropriate standards, thereby providing a very high level of public health protection;

  3) hydraulic containment of the plume of contaminants via pumping well 1-1, thereby protecting other District 1 water supply wells; and

  4) cessation of untreated discharge from well 1-1 to the Susquehanna River.

- Initiation of a supplemental Remedial Investigation and Feasibility Study to further investigate the extent of soil contamination in suspected source areas and to evaluate possible source control measures.

DECLARATIONS

Consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the national Contingency Plan (40 CFR Part 300), I have determined that the construction of an air stripping system to treat Vestal water supply well 1-1 and its subsequent use as the Town's primary water supply is a cost-effective remedy and provides adequate protection of public health, welfare and the environment. Furthermore, I have determined that it is necessary to undertake a supplemental Remedial Investigation and Feasibility Study to investigate the extent of soil contamination in suspected source areas and to evaluate possible source control measures. A determination regarding future source control actions will be made upon completion of this work.

The State of New York has been consulted and agrees with the approved remedy. In addition, the action will require future operation, maintenance, and monitoring activities to ensure the continued effectiveness of the remedy. These activities are presently considered eligible for Trust Fund monies for a period of one year; however, pending CERCLA legislation may affect this eligibility and/or the period of eligibility.

Funding of this remedial action will occur at the time of CERCLA reauthorization; moreover, I have determined that the action being taken will be appropriate when balanced against the future availability of Trust Fund monies for use at other sites.

June 27, 1986
Date

Christopher J. Daggett
Regional Administrator

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- Initiation of a supplemental Remedial Investigation and Feasibility Study to further investigate the extent of soil contamination in suspected source areas and to evaluate possible source control measures.

Trichloroethylene also has been shown to affect the same target organs in laboratory animals and humans in the workplace as do the other three chlorinated compounds of concern. In addition, there is some evidence from animal studies to suggest the possibility that trichloroethylene is a potential human carcinogen. Most of the exposures to contaminants associated with the plume of contamination have been or will be at low levels. Since carcinogenic effects are often related to low level exposures, trichloroethylene is therefore considered the major contaminant of concern.

Exposure to these contaminants is almost non-existent at the present time, since well 1-1 has been taken out of service and the pumpage to waste discharges from a pipe beneath the surface of the Susquehanna River. Possible exposure routes and receptors could change, however, with implementation of various remedial alternatives. These potential exposures have been analyzed in the risk assessment performed for this site and will be discussed in the alternatives evaluation.

ENFORCEMENT

No negotiations with potentially responsible parties (PRP) have been conducted up to the present time. Information request letters were sent out in May, 1986, to two companies in the Stage Road industrial park; namely, Chenango Industries and Neil Guiles Asphalt Company. The latter presently leases its property from O'Brian Oil and Supply, who will also be receiving an information request in the near future.

Enforcement efforts have been hampered by the lack of obvious sources of contamination. The RI/FS has succeeded in determining the two most likely locations where contamination entered the groundwater; therefore, enforcement activity is now expected to increase as a result. The supplemental RI/FS which will further investigate suspected source areas will be designed to facilitate this enforcement effort.

The Town of Vestal has also initiated a claim against Chenango Industries pursuant to Section 112 of CERCLA for loss of well 1-1.

ALTERNATIVES EVALUATION

The public health and environmental objectives of the RI/FS were as follows:

- Contain the plume of contamination to mitigate further contamination of public water supplies;
- Provide a safe, reliable water supply to the Town of Vestal; and
- Ensure that the quality and best use of the Susquehanna River are not impaired.

The objective of the proposed supplemental source control RI/FS will be to determine which, if any, source control measures would be feasible and cost effective.

Initial Screening of Alternatives

General remedial technologies that were initially considered in the feasibility study were a variety of contaminant source controls, groundwater decontamination methods and alternative drinking water supplies (table 2). Since a supplemental source control RI/FS will be performed in the near future, source control technologies were eliminated from further consideration at the present time.

Feasible remedial technologies were further developed into an array of ten alternatives (table 3) which were then subjected to a preliminary screening based on environmental, public health and cost criteria. All of the alternatives were considered to meet or exceed applicable or relevant and appropriate standards as measured at the water supply well. An off-site disposal alternative will be developed as part of the supplemental RI/FS, since source control technology might involve off-site disposal of contaminated soils.

The preliminary screening of alternatives resulted in the elimination of six alternatives. Installation of extraction (interceptor) wells was eliminated based on technical problems in modeling the complex subsurface hydrogeology, with no guarantee that extraction wells in combination with well 1-1 would effect aquifer clean-up significantly faster than the continuation of pumping well 1-1 alone. At the present time, it is estimated that continued pumping of well 1-1 will cleanse the aquifer in 20+ years. Also, there would be significantly higher costs to implement an extraction well alternative, with minimal benefits gained through its implementation.

Provision of a supplemental water supply from either Johnson City or Binghamton was eliminated because they would be an order of magnitude higher in cost with no additional environmental benefits.

Installation of a new water supply well was eliminated due to the uncertainty in siting a new well. There is no guarantee that it would not encounter similar problems to those of wells 1-1 and 1-3.

The use of granular activated carbon to remove volatile organics from well 1-1, either alone or in conjunction with a packed column air stripper, was removed from further consideration because of higher costs and greater difficulty of operation and maintenance. At the present time, the environmental benefits of air stripping with activated carbon over air stripping alone are questionable; however, if the detailed design phase of this project indicates a possibility of unreliable performance of the packed column air stripper in achieving design standards,

then the use of activated carbon with air stripping will be re-examined at that time. At a minimum, the packed column air stripper will be designed with the capability of future addition of an activated carbon system should the Town of Vestal eventually decide to implement additional treatment.

Detailed Analysis of Alternatives

The initial screening, therefore, refined the list of remedial alternatives to the following:

- No action;
- Air stripping of well 1-1 as a primary water supply;
- Air stripping of well 1-1 as a secondary water supply; and
- Provision of supplemental water supply from District 5.

A detailed analysis of these alternatives was then performed, consistent with 40 CFR Part 300.68(i). The detailed analysis of each alternative included refinement and specification of alternatives in detail, with emphasis on use of established technology; detailed cost estimation, including operation and maintenance costs, and distribution of costs over time; evaluation in terms of engineering implementation, reliability, and constructability; assessment of the extent to which the alternative is expected to effectively prevent, mitigate, or minimize threats to, and provide adequate protection of, public health; and an analysis of any adverse environmental impacts.

Applicable or relevant and appropriate standards for this site include this Agency's Maximum Contaminant Levels (MCLs), which have been proposed pursuant to the Safe Drinking Water Act, and New York State's groundwater quality standards established pursuant to the Clean Water Act. The applicable proposed MCLs are for trichloroethylene (5 ug/l) and 1,1,1-trichloroethane (200 ug/l). The applicable State standard is for trichloroethylene (10 ug/l).

Complete costs associated with the alternatives are presented in table 4. A summary of the alternatives evaluation follows.

No Action

The no action alternative is the continuation of the present situation, which involves pumping well 1-1 to waste into the Susquehanna River and using well 1-2 as the primary District 1 water supply, with well 1-3 acting as reserve capacity.

This alternative has been proven to be technically feasible and effective since it has already been implemented and has been reliable over six years in terms of controlling the migration of the contaminant plume. Operation and maintenance (O&M) is straightforward and approximates the normal operation of a water supply well. This alternative also provides a source of drinking water, i.e. well 1-2, whose water quality exceeds applicable or relevant and appropriate standards. However, the long-term reliability of using well 1-2 with 1-3 as reserve capacity is questionable because of the limited options available in the event of mechanical failure or future contamination of well 1-2. Also, this alternative includes the continued discharge to the Susquehanna River of low levels of volatile organic chemicals (VOCs) which, although not expected to create a significant adverse environmental impact, is nevertheless a negative feature of this alternative.

The present worth costs of the no action alternative are the least of the four alternatives, although the costs of all four alternatives are very similar and are not expected to play a significant role in selection of a remedial alternative.

Air Stripping as Primary Water Supply

This alternative involves the installation of an air stripping column approximately 40 feet in height (figure 7) near well 1-1, combined with retrofitting of the well's pump for the desired flow rate and discharge pressure. To provide stripping air to the column, a blower would be installed with the column. A wet well and new effluent pump would be provided to pump the treated water into the water supply distribution system. The present discharge of well 1-1 into the Susquehanna River would therefore be eliminated. Preliminary design calculations were based on maximum expected influent VOC concentrations of approximately twice the maximum levels of contaminants found in the last three years. To provide flexibility in the unlikely event that VOC levels should rise above design levels, the column would be designed so that either the column height could be increased or activated carbon technology could be added as secondary treatment.

The technical feasibility and effectiveness of a properly designed packed column air stripper is well documented for volatile organic contaminants. O&M is not complicated, and actual construction would be relatively easy and rapid. Since well 1-1 would continue to be pumped as it is under the no action alternative, the plume of contamination would still be effectively controlled. The effluent from the stripper would provide capacity for the average daily demand of District 1, with well 1-2 used as reserve capacity. The air stripper will be designed

to achieve an effluent limit which will approximate the level associated with a 10^{-6} increase in cancer due to chronic trichloroethylene exposure. The system will also be capable of achieving an effluent limit of less than 1 ug/l for trichloroethylene, which is considered the detection limit. Therefore, this alternative will exceed applicable or appropriate and relevant standards, providing a very high level of public health protection with no significant increase in cost. The long-term reliability of District 1's water supply will also be returned to the level that existed prior to contamination of well 1-1.

Emissions from the air stripper will consist of extremely low levels of chlorinated hydrocarbons which will pose no chronic or sub-chronic health threats to downfield receptors. Any potential impacts to the biota of the Susquehanna River will also be eliminated.

The present worth costs of this alternative are slightly greater than the no action alternative, but less than the other alternatives that survived preliminary screening.

Air Stripping as Secondary Water Supply

This alternative involves the same air stripping technology, design criteria and operation and maintenance as the previously discussed alternative. It would differ primarily in that well 1-1 would supplement well 1-2 as reserve capacity and would function as a primary water supply only in the event of a shutdown of well 1-2. At times when well 1-1 was being pumped to the distribution system, it would first be treated by the packed tower aeration system. At other times, well 1-1 would be pumped to the Susquehanna River without treatment.

The technical feasibility and effectiveness of this alternative do not vary from the previous one. The reliability of the system in exceeding applicable or appropriate and relevant standards is slightly greater, since the treated water from well 1-1 would only be used occasionally, and at those times it would be blended with uncontaminated water from well 1-2. However, reliability of air stripping technology is high enough so that this advantage is considered minor.

Periodic untreated discharge of well 1-1 into the Susquehanna River might have minimal adverse environmental impacts. Emissions from the air stripper would be similar to those associated with the previous alternative, but on an intermittent basis.

This alternative is greater in present worth costs than the operation of well 1-1 as a primary water supply due to the additional power costs associated with periodic pumping to waste of well 1-1.

Supplemental Water Supply From District 5

Under this alternative, well 5-1 would be retrofitted with a pumping capacity of 1 MGD, and Districts 1 and 5 would be interconnected with an additional transmission pipe to make one district. Wells 1-2 and 5-1 would then act as backup to each other with each having the capacity (1 MGD) to supply the current peak demand of both districts. A new 10-inch diameter transmission pipe would be installed between Districts 1 and 5 (figure 8) to supplement the existing connection. The new pipe would be sized to carry approximately 500 gpm, while the existing pipe carries approximately 200 gpm. The exact pipeline route would be determined during the design phase in addition to a more detailed evaluation of the pressure differentials and water usage. Well 1-1 would continue to be pumped to waste into the Susquehanna River.

The technical feasibility and effectiveness of this alternative is virtually guaranteed. O&M would be straightforward and would approximate the normal operation of a water supply well. In addition, it would provide a high degree of long-term reliability for District 1's water needs. However, this reliability is contingent upon well 5-1, presently untreated, continuing to produce high quality water. This alternative would also take somewhat longer to implement than the air stripping alternatives, and would involve temporary construction impacts along the pipeline route, which would mostly traverse previously disturbed rights-of-ways. Untreated discharge of well 1-1 into the Susquehanna River would continue under this alternative, which would not be expected to create a significant adverse environmental impact.

This is the most expensive of the four alternatives in terms of total present worth.

RECOMMENDED ALTERNATIVE

The appropriate extent of remedy shall be determined by EPA's selection of a cost-effective remedial alternative that effectively mitigates and minimizes threats to and provides adequate protection of public health and welfare and the environment. This will normally require selection of a remedy that attains or exceeds applicable or relevant and appropriate federal and state public health and environmental requirements that have been identified for the site.

Each of the alternatives selected for detailed evaluation is considered an appropriate extent of remedy within the above definition. Based on meetings with New York State, its consultants, the Town of Vestal and the public on the RI/FS,

it is recommended that air stripping of well 1-1 with subsequent distribution of the treated water as District 1's primary water supply be selected as the remedial action for this project. Detailed capital cost estimates for the recommended alternative are given in table 5.

This alternative is only slightly higher in cost than the lowest cost alternative i.e. no action, yet provides greater reliability and flexibility for the District 1 water supply by means of the restoration of District 1's water supply to full capacity, discontinues the present untreated discharge of well 1-1 to the Susquehanna River, and has a wide measure of Town and public support.

COMMUNITY RELATIONS

Community perception of the Vestal well 1-1 contamination problem has been an important factor in placing this site on the Superfund National Priorities List. Chlorinated solvents were discovered in water from well 1-1 in April 1980. In response to several groundwater contamination problems in Vestal, the Purity of Waters Committee was set up. Numerous public meetings were held to discuss the issue and a large measure of public concern was expressed. Considerable local press regarding the issue contributed to public awareness. Since the NPL listing in December 1982, public concern has subsided, and the townspeople have been generally satisfied that appropriate action is being taken and that no contaminated water is being consumed. However, there is still concern regarding the potential spread of contamination. In order to avoid additional public concern, the Vestal Town Board adopted a 1 ug/l cleanup criterion for any single VOC prior to putting well 1-1 back on/line. The selected alternative will be capable of achieving that criterion.

Specific concerns that were raised during the public comment period, including comments made at the public meeting held on June 10, 1986, at Town Hall in Vestal (figure 9), are answered in the Responsiveness Summary.

CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

At the present time, there are no federal environmental laws other than the Safe Drinking Water Act which are applicable to implementing the selected remedial action at this site.

Trichloroethylene has been chosen by EPA for evaluation and possible future regulation pursuant to the Clean Air Act's National Emission Standards for Hazardous Air Pollutants (NESHAP). However, such regulation will likely not be promulgated for 1-2

years. At the present time, EPA believes that the risk assessment performed for the operation of the packed column air stripper has sufficiently demonstrated the extremely low risk associated with the predicted level of air emissions on likely receptor areas, using worst case assumptions throughout the analysis.

FUTURE ACTIONS

A second operable unit consisting of source control remedial measures may be implemented following the supplemental RI/FS and issuance of a subsequent EPA Record of Decision. Source control measures may be a cost-effective means of expediting the treatment of the contaminated groundwater.

OPERATION AND MAINTENANCE

Preliminary cost estimates for the O&M of the packed column air stripper are given in table 6.

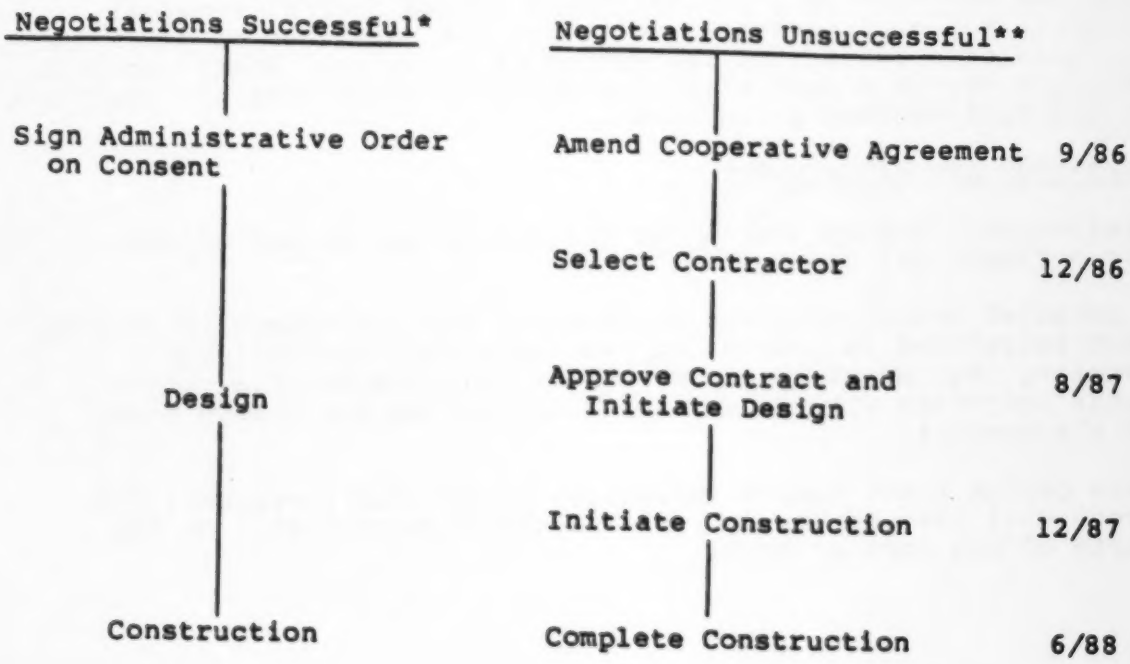
A detailed description and schedule of O&M procedures, including such activities as instrument readings, influent/effluent sampling, equipment inspections, and maintenance of a spare parts inventory will be developed as part of the design phase of the project.

Once CERCLA trust fund eligibility for O&M costs expires, O&M costs will then be borne by either the Town of Vestal or the State of New York or both.

SCHEDULE

Record of Decision 6/30/86

Initiate Negotiations with PRP's 7/86



*Subsequent activity dates are subject to length of negotiations.
**Assumes State lead on design and the availability of funds in September, 1986.

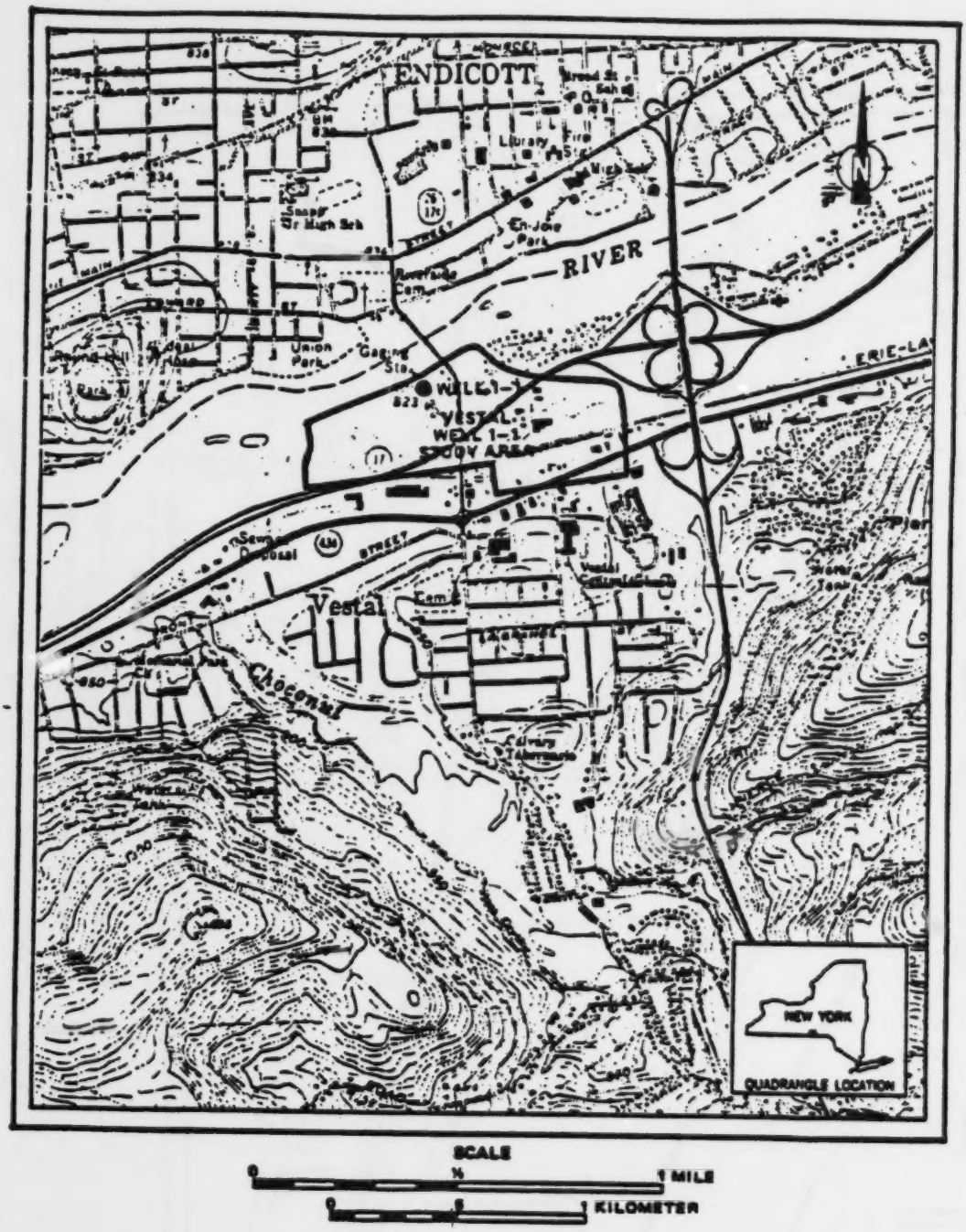


Figure 1 WELL 1–1 SITE STUDY AREA

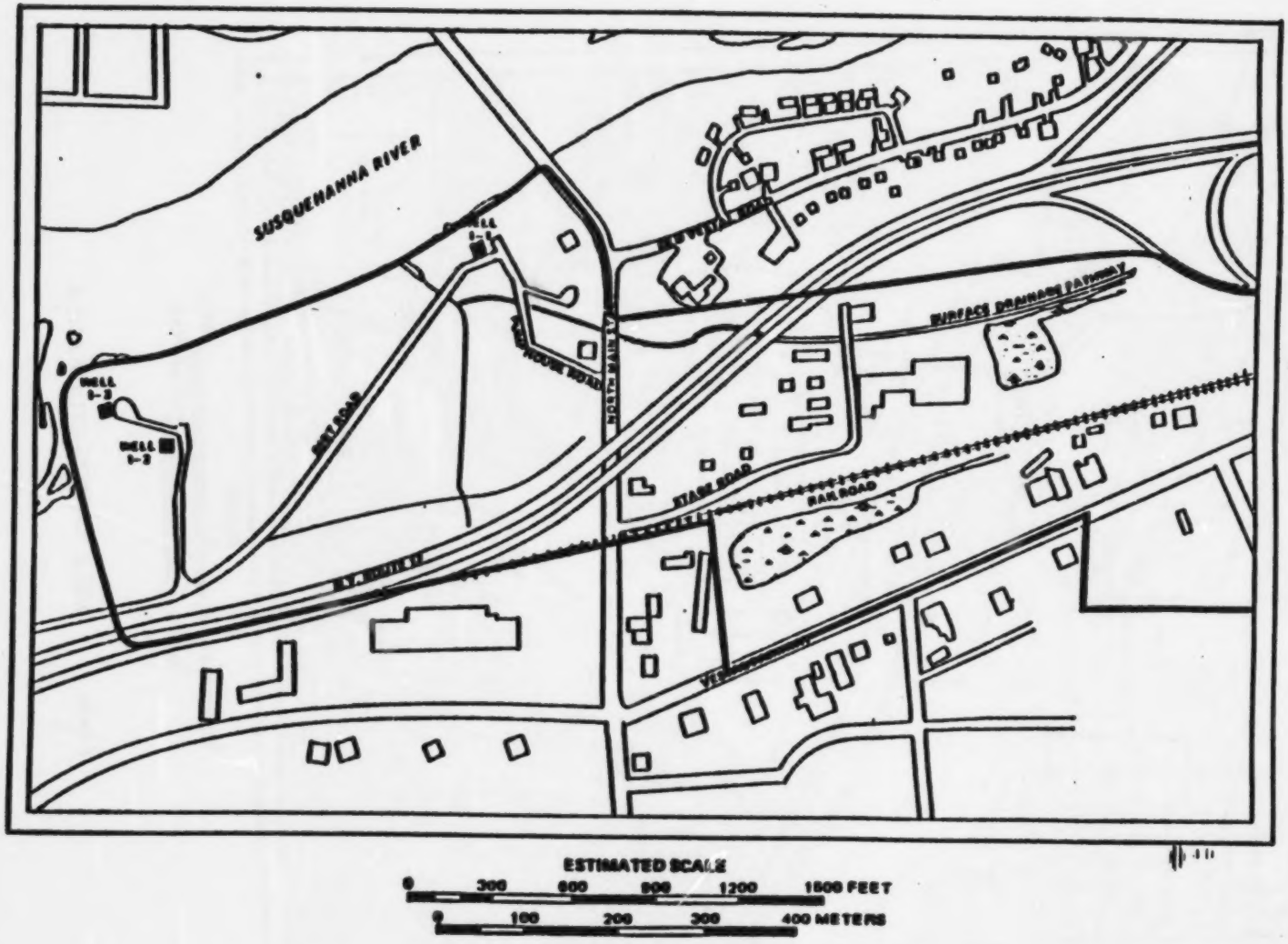


Figure 2 VESTAL WELL 1–1 STUDY AREA AND ENVIRONS

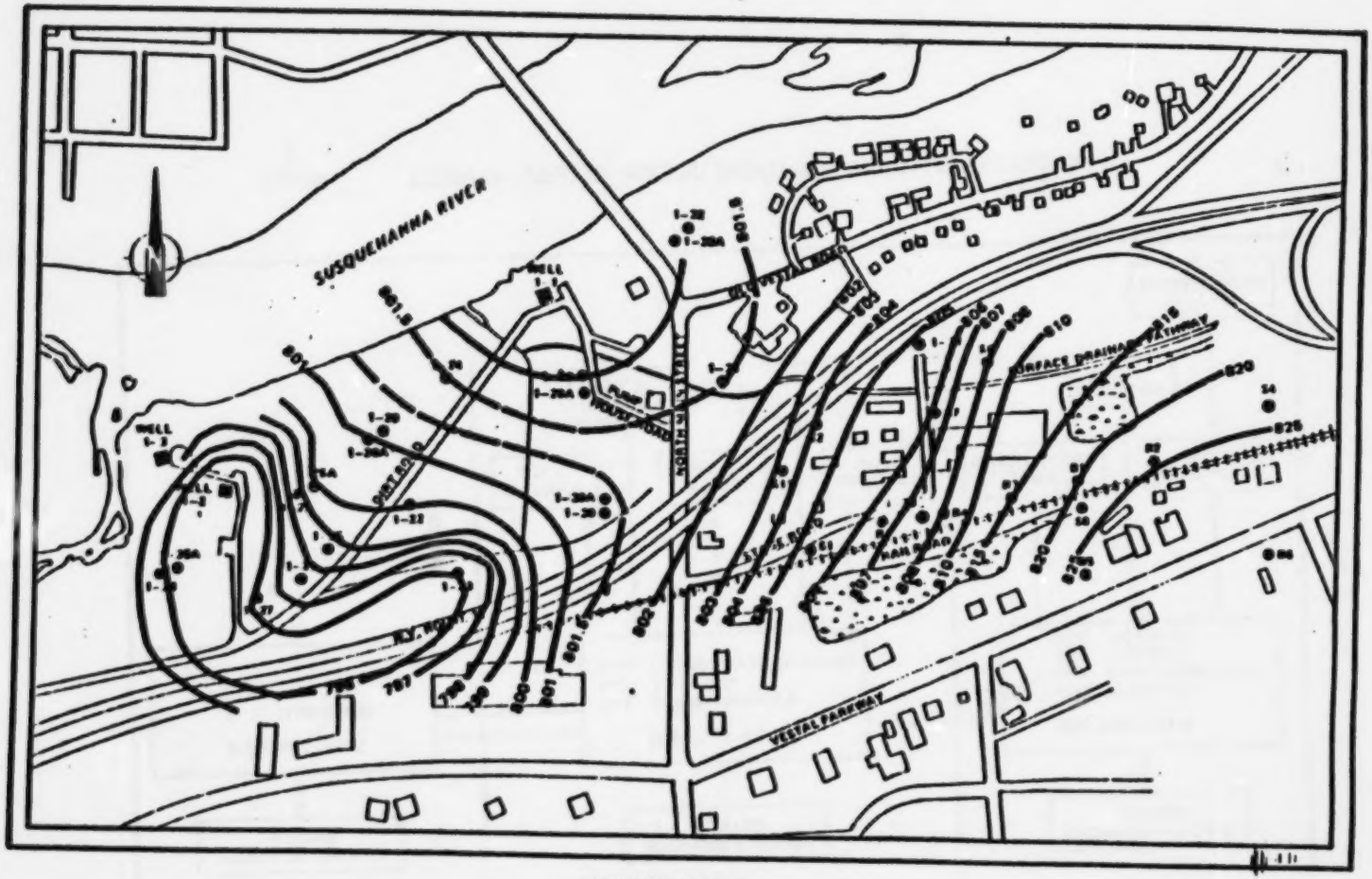


Figure 3 WATER TABLE CONTOUR MAP, APRIL 1985

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analysis and conclusions

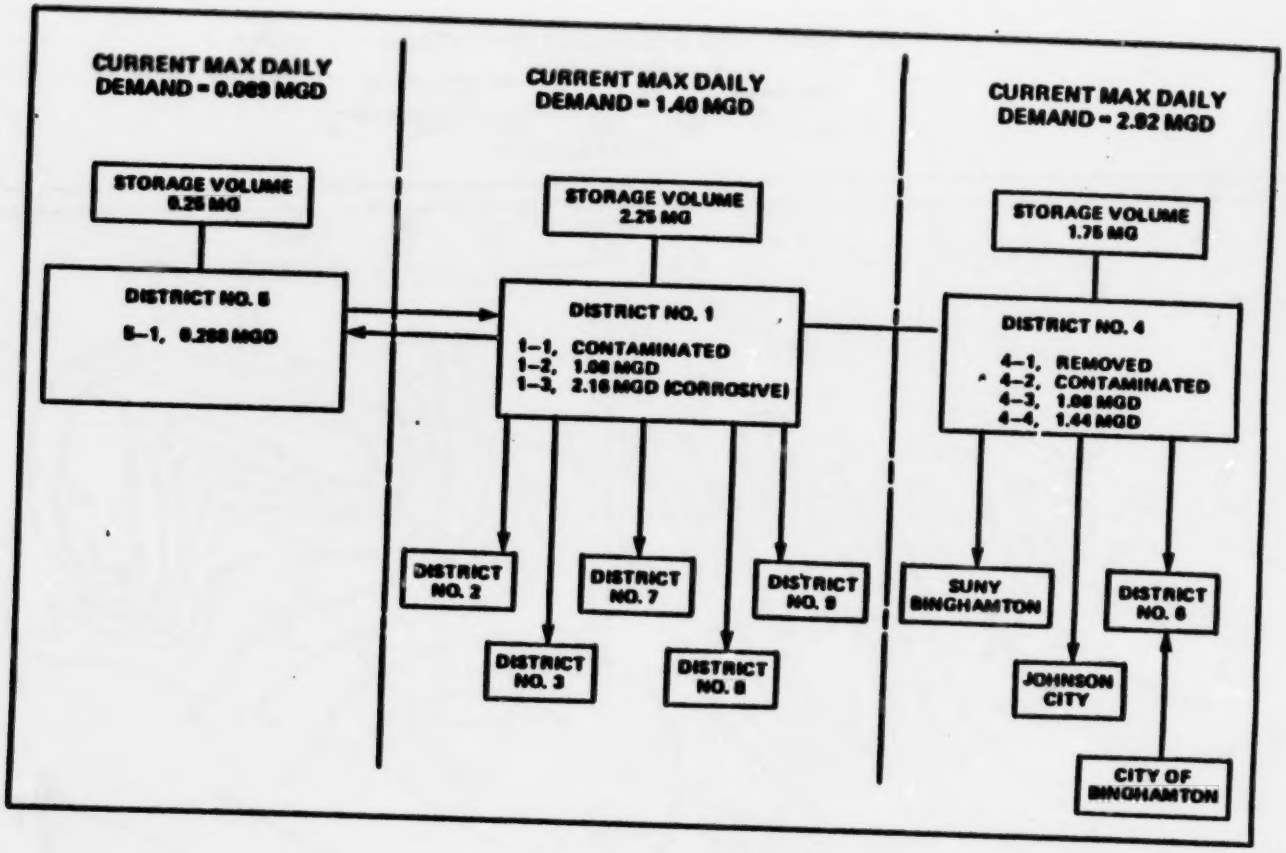

Figure 4 TOWN OF VESTAL WATER DISTRICT INTERCONNECTIONS

Table 1

WELL 1-1 HISTORICAL VOC LEVELS

ug/l

Date	1,1,1-Trichloroethane	TCE	1,1,-Dichloroethane	1,2-Trans-Dichloroethylene
06-16-80	1,400/1,500	130/390	—	—
06-27-80	1,600	470	—	—
07-02-80	13	5	—	—
02-18-81	420	150	—	—
09-18-81	44	22	—	—
10-22-81	260	86	81	—
11-04-81	188	108	—	—
01-13-82	135	94	—	—
02-15-82	198	168	—	—
04-13-82	68	67	—	—
05-10-82	—	—	—	—
05-11-82	145	93	—	—
06-15-82	156	11	—	—
05-24-83	145	75	—	—
08-13-84	280	170	150	—
09-09-84	140	69	—	—
Remedial Investigation 04-24-85	47	60	71	58

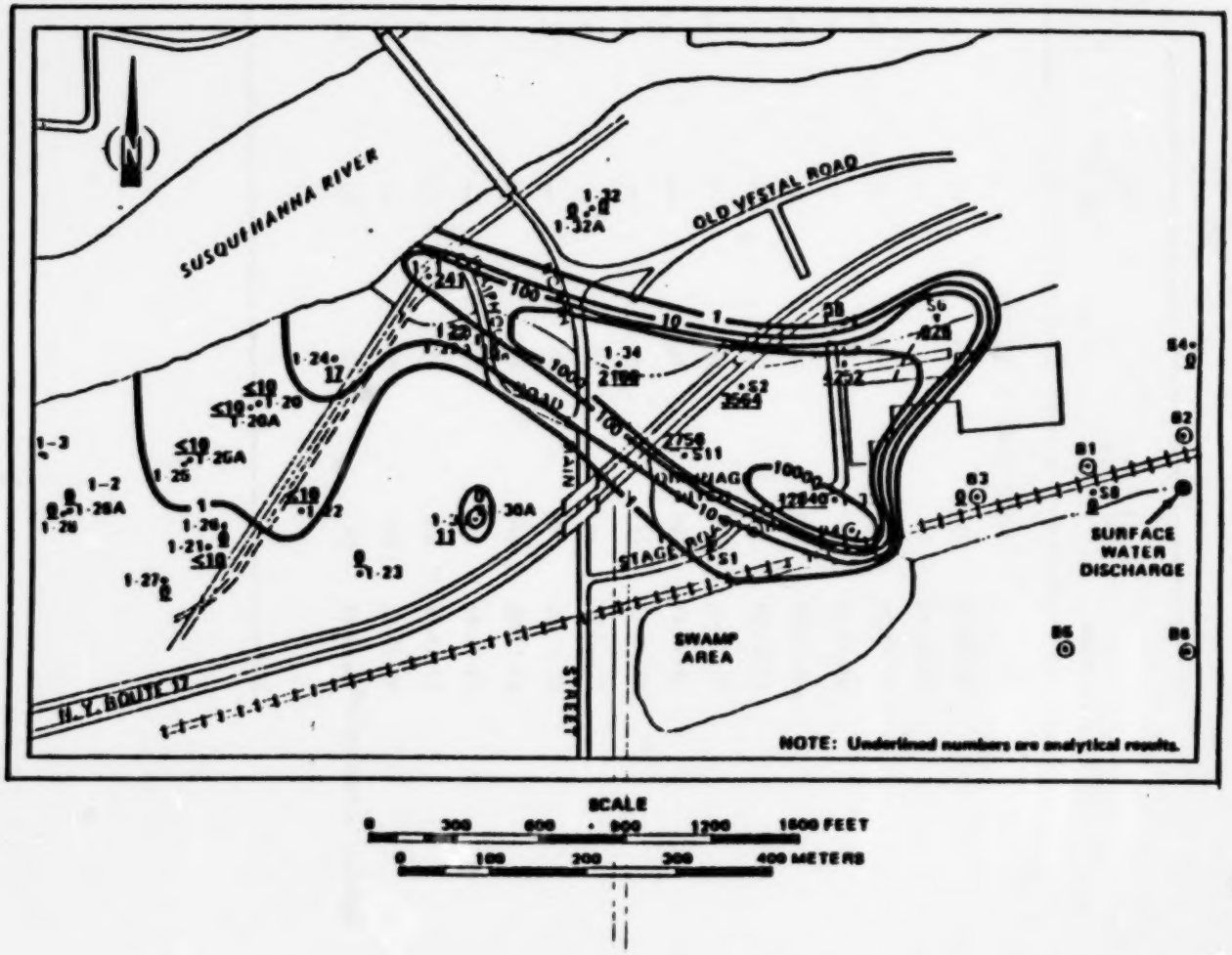

Figure 5 AREAL EXTENT OF GROUNDWATER CONTAMINATION – TOTAL VOLATILE ORGANICS (ppb)

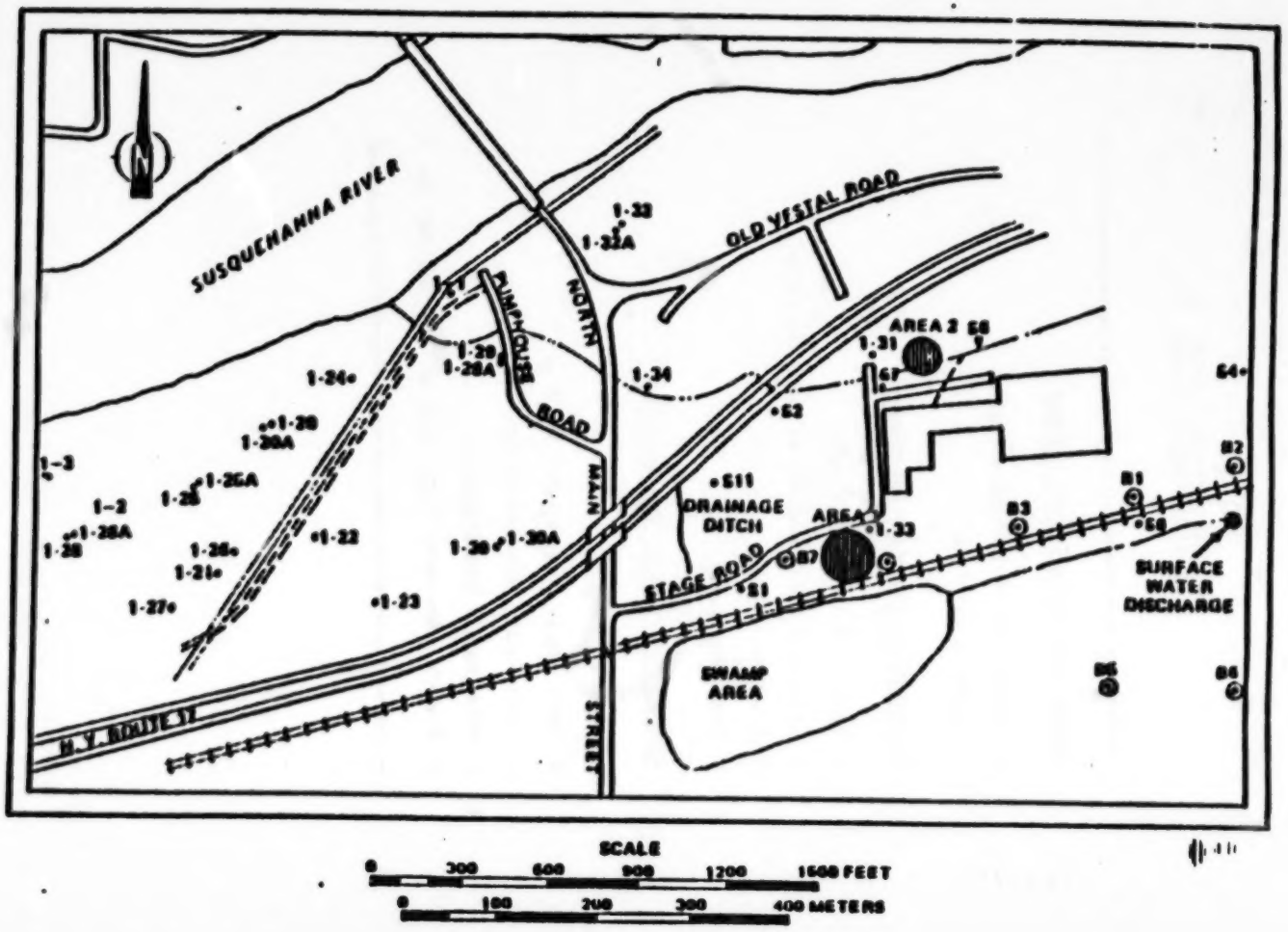

Figure 6 LOCATIONS OF SURFACE DISCHARGES APPARENTLY RESULTING IN GROUNDWATER CONTAMINATION

Table
2
GENERAL RESPONSE ACTIONS AND
ASSOCIATED REMEDIAL TECHNOLOGIES

Contaminant Source Control Methods

- Install groundwater cut-off walls
- Source elimination

Groundwater Decontamination Methods

- Install an interceptor well
- Continue to pump Well 1-1 to waste (No action)
- Treat Well 1-1
- Treat the source

Alternative Drinking Water Supplies

- Treat Well 1-3
- Water supply from District No. 3
- Water supply from Johnson City
- Water supply from Binghamton
- Install a new water supply well in Water District No. 1

Table 3

WATER DISTRICT NO. 1 OPERATING CHARACTERISTICS

Alternative	Water Supply Sources in Operation					
	Well 1-1 to Waste	Well 1-1 to Distribution	Well 1-2 to Distribution	Well 1-3 to Distribution	Extraction Well to Waste	Supplemental Water Supply
No Action	X		X	Y		
Air Stripping Well 1-1*	X	Y	X			
Air Stripping Well 1-1**		X	Y			
GAC Adsorption Well 1-1	X	Y	X			
Combined Air Stripping/GAC Adsorption Well 1-1	X	Y	X			
Air Stripping Extraction Well and Well 1-1	X	Y	X		X	
Water Supply from District No. 5	X		X			Y
Water Supply from Johnson City	X		X			Y
Water Supply from Binghamton	X		X			Y
New Water Supply Well	X		X			Y

Key: X = At full capacity.
Y = As supplemental supply.

*Using Well 1-2 as the primary supply and Well 1-1 as supplement.
**Using Well 1-1 as the primary supply and Well 1-2 as supplement.

Table 5

ESTIMATED CAPITAL COST OF AIR STRIPPING WELL 1-1

Building Construction and Materials	$135,500
Equipment (Packed Column, Blowers, Pumps, Controls, etc.)	103,400
Instrumentation and Electrical	49,500
Subtotal	288,400
Engineering and Contingency @ 35%	101,000
Total	$389,400

Table 6

ESTIMATED O & M COSTS OF AIR STRIPPING WELL 1-1

Power*	$ 143,300**	$ 104,850†
Sampling	2,500	2,500
Labor	1,000	1,000
Maintenance Materials	11,400	11,400
	$ 158,200/yr	$ 119,750/yr
Present Worth††	$ 1,491,300	$1,128,900

*For blowers, heating, ventilation, lighting, and incremental costs for pumping water to top of column.
**Based on Well 1-1 as the supplemental supply (from Table 3-1).
†Based on Well 1-1 as the primary supply (from Table 3-1).
††Based on 30 years @ 10% (P/A = 9.4269).

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ecology and environment

Table 4

ESTIMATED COSTS FOR REMEDIAL ALTERNATIVES

Alternative	Capital Cost ($)	O & M Costs ($/yr)	Present Worth* of O & M Costs ($)	Total Present Worth ($)
No Action	0	160,500	1,513,000	1,513,000
Air Stripping Well 1-1**	389,400	158,200	1,491,300	1,880,700
Air Stripping Well 1-1†	389,400	119,750	1,128,900	1,518,300
Water Supply from District No. 5	426,300	155,600	1,466,800	1,893,100

*Present worth based on 30 years at 10% (P/A = 9.4269).
**Using Well 1-2 as the primary supply and Well 1-1 as supplement.
†Using Well 1-1 as the primary supply and Well 1-2 as supplement.

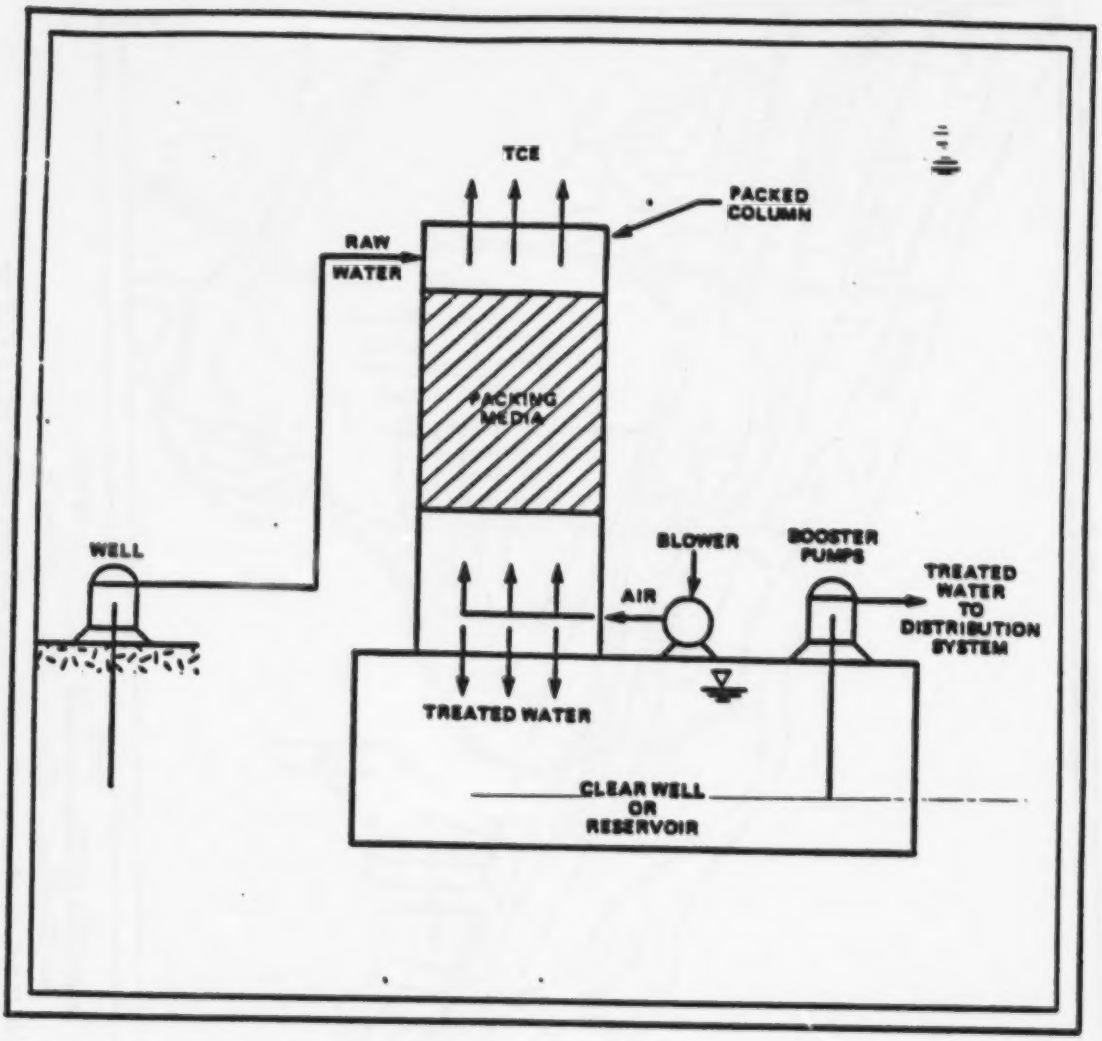

Figure 7 SCHEMATIC OF PACKED COLUMN AERATION PROCESS

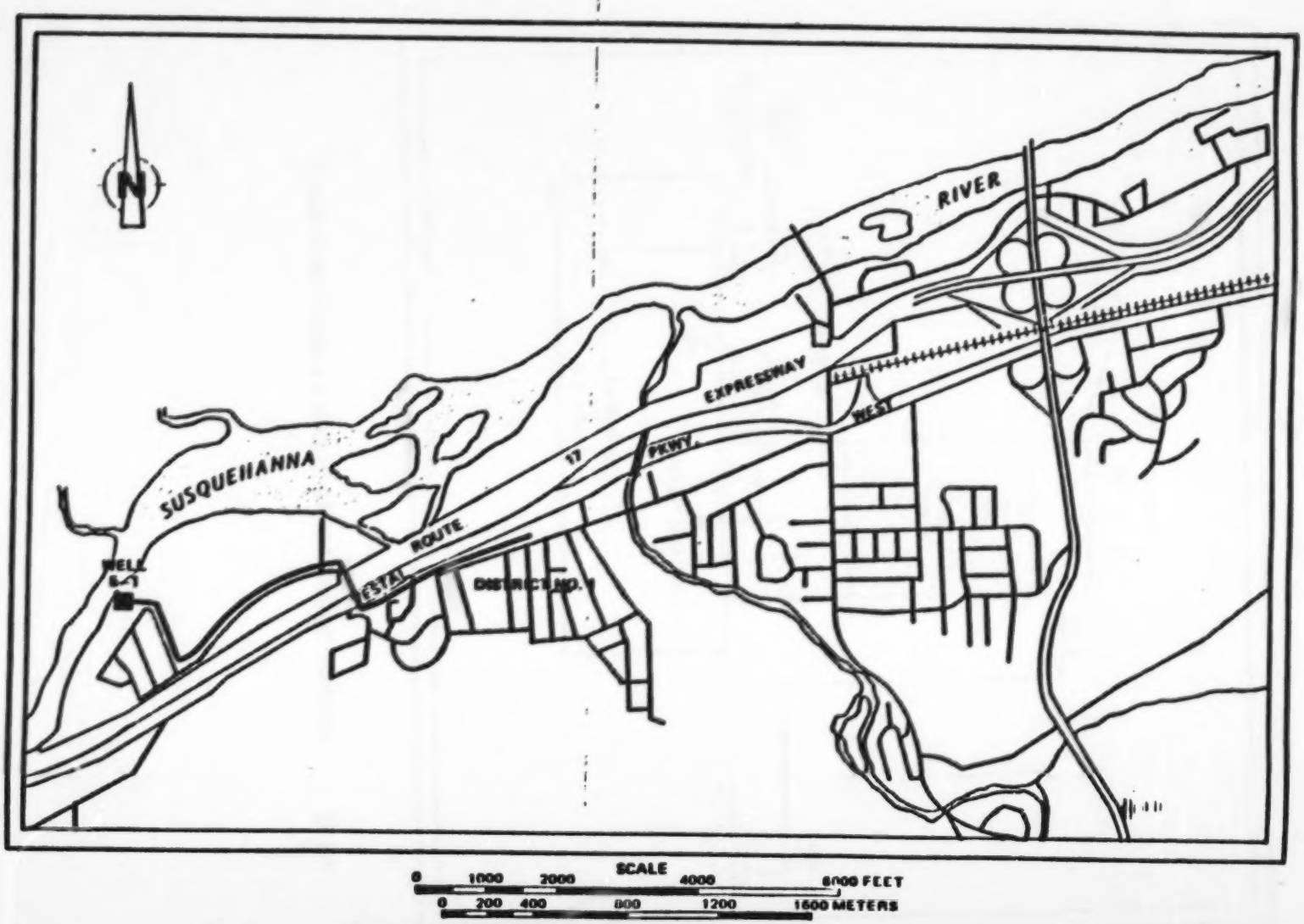

Figure 8 PROPOSED WATER SUPPLY TRANSMISSION MAIN FROM WELL 5–1 TO DISTRICT NO. 1

Figure 9

PUBLIC MEETING

7:00 PM—June 10, 1986

TOWN HALL

Vestal Parkway West—Vestal, N.Y.

The New York State Department of Environmental Conservation (DEC) will be holding a public meeting to explain and discuss the remedial investigation and feasibility study (RI/FS) that was carried out to determine the source and extent of contamination that was identified in one of the town of Vestal's water supply wells. In 1980 volatile organic chemicals, primary trichloroethane (TCA), dichloroethylene (DCE), dichloroethane (DCA) and trichloroethylene (TCE) all common degreasers, were found in the town's water supply well 1-1 located between the end of pump house road and the Susquehana River, a little west of North Main Street. The well was taken out of service and not used to avoid introducing contaminants into the town's drinking water supply.

During the remedial investigation, Ecology & Environment, Inc., an engineering firm under contract to DEC, installed seven monitoring wells, seven soil borings, and collected samples of air, surface water, groundwater and soils for chemical analysis. It was found that contamination was primarily limited to groundwater in an area to the northwest of Stage Road. It was determined that the contamination was not migrating toward the town's two other municipal supply wells located to the west of well 1-1. Currently, the possibility of public contact with the contaminants is very limited. The town will, however, continue to monitor the water supply wells closely to insure that they remain uncontaminated.

In addition to the field investigation, a Feasibility Study was conducted to evaluate various remedial plans for containing the plume and ensuring a safe, adequate supply of drinking water for the Town of Vestal. Several plans capable of achieving these objectives were developed and are presented in a report entitled, "Remedial Investigation Report, Risk Assessment, and Feasibility Study for Water Supply Well 1-1 Site, Vestal, New York". The report is available for review in the Vestal Public Library and the Vestal Town Clerk's office.

During the next month these alternatives will be evaluated and one will be selected as the recommended alternative. You are encouraged to attend the public meeting, read the report and provide any input that may help to select the best alternative.

If you have any questions or need additional information please call Jeffrey Brandow P.E. at 518/457-5677 or call 1-800-342-9296 and leave a recorded message and we will get back to you.

RESPONSIVENESS SUMMARY

VESTAL WATER SUPPLY WELL 1-1

Vestal Public Meeting
June 10, 1986

Question No.

1 What are the interrelationships between USEPA, NYSDEC, and the Town of Vestal?

Answer: NYSDEC is the lead agency for the Vestal Well 1-1 RI/FS

USEPA is funding the study through the Superfund program.

Town of Vestal is participating in the project as a reviewer of the study.

2. Several questions were asked about the emissions from the air stripping tower and the means for controlling the emissions.

Answer: The risk assessment that was performed as pa of this project determined that the expected levels of chlorinated hydrocarbons that will be emitted from the tower will be extremely low and will pose no significant level of risk to the highest impact receptors; therefore, no controls of air emissions are considered necessary at this time.

3. How will the installation of the remedial alternative be funded?

Answer: Funding of the remedial alternative is broken down as follows:

90% USEPA
10% NYSDEC

The Town of Vestal would operate the system as its own treatment plant after installation.

Will Vestal be reimbursed for the manpower used in operation of the system?

Answer: EPA will pay for operation and maintenance costs for a period of time to be specified at a later date. The actual long term agreements for operation the remedial system will be worked out between NYSDEC and the Town of Vestal.

Question No.

5 Who makes the decision on selection of the alternative?

Answer: The ultimate decision is made by USEPA, but they will consider all information including comments and suggestions by NYSDEC, The Town of Vestal, and the public.

6. What are the time frames for implementation that apply in this case?

Answer:

- o EPA will issue a record of decision (ROD) by June 30, 1986.
- o The next phase is the detail design phase which will take approximately one year to complete. However, I must point out Federal Superfund Program has not been re-authorized. So, some delays will occur as a result.
- o Construction of the remedial alternative should begin within 18 months of initiation of the design phase.

7 Are there air strippers presently in place and operating effectively right now?

Answer: Yes, there are 13 Superfund sites using this technology for removal of volatile organics from water. The technology is not new, although this application is new.

8. Several questions were asked regarding analytical results. How many water samples were taken? Was any gasoline detected? What analyses were conducted? What is the long term trend for pollutants? Are your results comparable with previous results?

Answer: Thirty-two water samples were collected. Twenty-six samples were collected from groundwater monitoring wells, one sample was collected from the public well 1-1, and five surface water samples were collected from the wetland area east of Chenengo Industries. All samples were analyzed for priority pollutant volatile organics and three samples (including well 1-1) were analyzed for all priority pollutants. There was no evidence of gasoline detected in any of the samples.

Question No.

8 (Cont'd.) The general long term trend for groundwater contamination is a gradual, but continual decline. Initial concentrations were on the order of 1.5 - 2 parts per million (ppm); the levels detected in April 1985 were 241 parts per billion (ppb). The analytical results to date are all comparable. The laboratories involved have been certified by the state and must meet stringent Quality Control/Quality Assurance programs.

9 Several questions were asked about the contaminant problem and the pumping of well 1-1.

Answer: Well 1-1 acts as a curtain to prevent migration of contaminants down gradient to wells 1-2 and 1-3. A cone of influence is developed near well 1-1 drawing in groundwater and contaminants from the contaminated plume. If well 1-1 is shut off, the contaminated groundwater could move in the direction of wells 1-2 and 1-3.

10 Are you aware of the gasoline problem at Rodriquez's Restaurant? What direction is the gasoline migrating?

Answer: Yes, we are aware of the problem. This particular problem is being handled under NYSDEC's Gas and Oil Spill Program. NYSDEC's regional oil spill engineer is currently developing a program to address localization and remediation of the problem.

11 Several questions were asked regarding the source of the groundwater aquifer supplying the public well field.

Answer: The majority of the groundwater supplying the well field comes from percolation of surface runoff into the underlying soils beginning in the hills to the south of the Susquehanna River. In addition, some water is pulled in from the Susquehanna River, although this source is very minor. The public wells draw water from 120-130 feet below ground surface which is decidedly deeper than than the bottom of the Susquehanna River.

12 Are water districts 1 and 5 currently connected by a water main?

Answer: Yes. However, the water main is quite small and has a very limited capacity for meeting the demands of either district.

Question No.

13 Are pollutants being pulled to the well field from the Endicott area?

Answer: There is a very low likelihood that contaminants are being drawn from the Endicott area. Groundwater does flow toward the river, which is the lowest point in the hydrogeological plane, and there is a down valley flow of water which would restrict the groundwater from flowing to the Vestal well field.

14 Why does cost effectiveness play a role in selection of a remedial measure?

Answer: All options identified in the feasibility study are capable of rectifying the water supply problems of Vestal. However, the cost of implementing these alternatives vary and, in some cases, are extremely high when compared to other feasible options. Consequently, cost becomes a deciding factor in screening some of the alternatives.

15 Was there any evidence obtained which indicated surface spills may have occurred or certain material may have corroded through sewer lines?

Answer: We conducted an evaluation of soils in the near surface area around the "hot spots" and found no evidence of spills. An additional survey will analyze the soils near the sewer line on stage road for evidence of contamination.

16 Has there been any check on contaminant migration between wells 1-1 and 1-2? Are there monitoring wells in this area? What analyses were conducted?

Answer: R.J. Martin Engineers installed at least 15 monitoring wells in the well field area around wells 1-1 and 1-2. We sampled all of these wells and conducted priority pollutant volatile organic analyses on the samples. All sampling results confirm that contamination is currently being captured by well 1-1.

17 Several questions were asked regarding safety devices on well 1-1 and monitoring water quality of well 1-1 during operation.

Answer: The specific details of any operation, maintenance, and monitoring programs will be developed during the detailed design phase and is dependent upon the specifications of the system. It is planned that there will be some means of continually checking the operation of the well pump and air studying unit.

Question No.

18 What are the maintenance costs associated with operation of the air stripping tower?

Answer: Those costs are provided in the Feasibility Study and estimated to be $11,000/year without a granular activated carbon filter.

19 Has a responsible party been determined? Are they bound to respond to the letter?

Answer: The RP (responsible party) has not been identified at this point in time. USEPA has sent out letters requesting information on the processes and operations of Chenango Industries and Guiles Asphalt to determine whether the materials and chemicals used by these industries are the same compounds found in the groundwater. The purpose of this effort is to recoup costs associated with the remedial investigation, design and implementation of the selected alternative. The addressees are required to respond to the letters.

20 Will you proceed with the project if no responsible party is identified?

Answer: USEPA is prepared to fund the design and ultimately the construction of the selected alternative.

21 Will there be any further testing?

Answer: Yes. We need to define the precise extent of contaminated soils in the areas near the "hot spots".

22 Are we sitting on a time bomb? Won't this project have funding problems because of passage of the Gramm Ruddman Act?

Answer: We do not anticipate a problem with funding once Superfund is reauthorized. In 1980 the Superfund program was funded for $1.6 billion for five years. Both the House and the Senate intend to fund the Superfund program at about the $9 billion level over five years. The main question that needs to be resolved concerns the source of funding.

23 How was the pollution originally discovered?

Answer: In 1978, there was a spill of a volatile, organic compound and as a result, all the public supply wells were checked. As it turned out, the contamination discovered in wells 1-1 and 4-2, were unrelated to the spill.

Question No.

24 Your survey of the sewer pipes indicates they are in good shape. Do you think contamination could have come from these lines? Are there any discharges to the sewer lines that can cause leaks in these lines?

Answer: The sewer lines were recently replaced and presently there is no contamination leaking from the lines. It is hard to say what historical leaks occurred from the sewer lines. Part of the additional study will look at the soils near the sewer lines. The analyses we ran on samples taken in the sewer, confirmed tetrachloroethylene was present, however; no caustic materials were identified.

25 Is there a SPDES permit that has been issued for the discharge of Well 1-1? If so, could DEC be a responsible party?

Answer: Yes, there has been a SPDES permit issued. DEC would not be considered a responsible party.

26 Are there any underground tanks in the area?

Answer: We have no indication that underground storage tanks are present in the area.

27 Risk assessments are very confusing, and never straight forward. Did you evaluate health problems? Were there any direct health studies?

Answer: We did undertake to protect human health by selecting an alternative that will meet the criterion of trichloroethylene in drinking water corresponding to a 10^{-6} cancer risk, which approximates the non-detectable goal of the Town of Vestal. We did not undertake any epidemiological studies. The results of these studies are difficult to interpret and should be left in the hands of research institutions.

What is the final recommended remedial alternative?

28 Answer: Well 1-1 will be continually pumping, it will be the primary water supply for water distribution. The water will be treated with an air stripping system to remove the volatile organics to below detectable levels. Well 1-2 will be used as a supplemental supply when peak demand exceeds the capacity of well 1-1.

Question No.

29 Why are the two artesian wells east of the well field not considered in the feasibility study as a possible alternative source?

Answer: Town engineers adressed this question and indicated the information available on the wells was too limited and extrapolation of production capacities from the data would be too misleading. There have been no formal detailed hydrolcgical studies performed on the area. These studies would be necessary before the capacities of the wells could be fully assessed.

Comments:

1 Several people urge including a granular activated carbon filter as a polishing system on the water from Well 1-1 prior to distributing it to water district 1.

2 There are 68 housing units scheduled to be built in the Castle Gardens area in Water district 5. I don't think we (Town of Vestal) can afford to pump well 1-1 continually without using the water. I don't think the water supply would hold up.

3 A comment was made regarding the success of the superfund program and mention was made that the program was not very effective.

Response: USEPA indicated their program was very successful to date and had numerous remedial actions already functioning. NYSDEC indicated the comment was probably addressing the state superfund program and indicated the governor had raised the funding level to $30 million per year and had proposed a $1.4 billion bond program as a long term funding source for the superfund problems.

RESPONSE TO WRITTEN COMMENTS

Written comments were received from four parties during the public comment period: The Town of Vestal, Mrs. Roger Kilmer, Susquehanna Sierra Club, and the Vestal Conservation Advisory Commission. Several of the comments contained in these letters duplicate remarks made at the June 10, 1986 public meeting; however, separate responses will be provided in this section.

Comment: All four letters urge that an adsorption unit of granular activated carbon (GAC) be added to the water treatment system as a supplement to the recommended air stripper. The principal reasons given are that the GAC unit would ensure non-detectable levels in the treated water in the event of unanticipated increases in contaminant levels at the wellhead or the appearance of previously undetected contaminants. The four commentors indicate that the use of GAC is imperative if there is to be public confidence in the treatment system.

Response: The final treatment system which will be installed on Well 1-1 will be designed to achieve non-detectable levels of organic compounds in the treated water under any forseeable situation. It is currently anticipated that an air stripper alone can be designed to accomplish this goal. During the design phase of the project, this question will be examined in greater detail. If there is any reason, at that point, to believe that an air stripper alone will not be capable of achieving the stated goal, then the use of GAC would be re-evaluated. In any event, the system will be designed with sufficient flexibility to allow a GAC adsorption unit to be added at a future date, if necessary.

Comment: A commentor suggested that "all appropriate measures be taken to retain air quality" in regard to the air emissions from the air stripper.

Response: As part of the risk assessment which was part of the study, a very conservative analysis of the air emissions from the stripper indicated that contaminant concentrations will be substantially below acceptable ambient levels (aal's) for the compounds present. It was therefore concluded that no action would be required.

Comment: Two commentors indicated concern about trace levels of contamination near monitoring wells 1-20 and 1-22 and felt that more investigation was needed in this area.

Response: A supplementary field investigation is planned to further define potential source areas. This field investigation will include additional sampling in the area around wells 1-20 and 1-22.

Comment: Three commentors indicated concern over the appearance of several organic compounds in recent sampling of Well 5-1 and felt that the situation should be investigated.

Response: This study was intended to address the contamination problem at Well 1-1. Well 5-1 was indirectly involved because of its consideration as an alternate water supply to District 1. Any evaluation of Well 5-1 is beyond the scope of this study and it is suggested that questions regarding the quality of water from Well 5-1 be addressed to the Broome County Health Department.

Comment: One commentor indicated that it would be desirable to be able to see the Well 1-1 discharge to ensure that the well is pumping continuously.

Response: Under the proposed remedial plan, this discharge will be eliminated. Presently, the Town of Vestal has indicated that they regularly monitor the discharge to ensure that it continues uninterrupted.

Comment: Two commentors wondered if the Well 1-1 discharge to the Susquehanna River was contaminating downstream wells.

Response: The organic compounds in the Well 1-1 discharge are immediately diluted to well below detectable levels; therefore, there would be no measurable impact on downstream wells.

Comment: One commentor suggested that further investigation is necessary to define source areas and determine responsible parties.

Response: Additional investigation is planned for this purpose.

Comment: One commentor suggested that a rigorous monitoring program would be required after the air stripper is installed.

Response: An extensive monitoring program will be developed during the design phase and will be implemented following installation of the air stripper.

Comment: One commentor suggested that the entire Vestal area should have been studied.

Response: While this may be a good idea, it is clearly beyond the scope of this study.

Comment: One commentor felt that Choconut Creek should have been studied.

Response: Choconut Creek is too far downgradient to be affecting Well 1-1 and therefore was not studied as part of this investigation.

Comment: One commentor indicated that she was very concerned about health problems in the area and felt that, in general, more needs to be done to protect groundwater.

Response: Both the U.S. Environmental Protection Agency and the New York State Department of Environmental Conservation agree that protection of our groundwater resources is extremely important. Progress has been made and both agencies are committed to expanding on these efforts. In regard to health problems in the Town of Vestal, it is suggested that the commentor contact either the Broome County Health Department or the New York State Department of Health with any questions she may have.

Comment: One commentor indicated her disappointment with the lack of participation by elected and local officials at the public meeting.

Response: State and local officials were given advance notice of the public meeting. Respresentatives of the New York State Department of Environmental Conservation and the U.S. Environmental Protection Agency were involved in the presentation at the meeting. In addition, representatives of the Town of Vestal and the Broome County Health Department were present in the audience. If the commentor feels that other individuals should have been present at the meeting, it is suggested that she contact those people directly.

Jeffrey Brando P.E.:

June 16, 1986

Suggestions and comments were asked for at the meeting June, 10, at The Vestal Town Hall. Here are my concerns.

The meeting was sincere and interesting, and instructive. One thing I question? Do we have positive proof that the Air Filtration system proposed, will work on this great amount of Toxic pollution, in such a polluted area, or are we making an educated guess, and experimenting? Even if the above statement may be true, I still say try it, but add the Charcoal filtration also.

As we all know, the Toxic pollution in that area is almost impossible to correct, with present Government funds. I was appaled to hear our Town Supervisor say no one drank the toxic polluted water. No one knows how long Well 1-1 has been polluted, or how long people in well district 1, drank the water.

This whole area has only one sole source Acquifer, and it is time Federal, State, and Local Governments, along with Health Departments, EPA, and DEC, realize the seriousness of that Acquifer, being permantly polluted. There is an old adage, "A stitch in time saves nine". Out of ignorance and neglect, no one took those stitches. If that Acquifer is not protected, this whole area will become a disaster area.

Yes! We need well 1-1, district 1 on line. If you are positive the proposed process will work, proceed post haste. There must also be instituted, along with the installation, a constant testing, of the water, at least, once a month.

The Susquehannah river is over much of the Aquifer, and even DEC gives SPEDI permits, without proper supervision. It is wrong that you are limited to the pollution, only in the Stage Road area. Vestal is surrounded by hills. Water runs down hill. If my knowledge is correct, all of Vestals well districts, follow the aquifer, in low lying areas. It is not your fault, but the whole area should have been studied, for possible pollution.

It was said at the meeting, that well 1-3 draws its water from the river. However a Gentleman, highly qualified, told me well 1-3 draws most of its water, from Choconut Creek. That creek a few years back was called the most polluted creek, in New York State. There is a drainage ditch at the North end of Circle Drive, a short distance above well 1-3, which flows into the creek. In hot summer months, the ditch reeks with the odor of raw sewage. We notified the Town, they turned it over to the County Board of Health, and later we contacted our Represenative on the County Board of Supervisors, yet to date, nothing has been done to correct the situation. Do you wonder some of us worry about our wells?

Yes, I questioned that well -5 could be of help if necessary. My reasons- I heard a discussion by the Town Council, sometime back, that a conection should be made with District 1, in case well -5 ran out of water. I do not know the exact location of well -5. What I do know is, that to the right, as you enter Castle Garden, there was a municiple dump. Also much of that area is subject to flooding. Now 68 units of housing are being built where many in that area reported barrels being buried. Some belive they had contained Toxic Chemicals. I understand both the Town and DEC took the word of the owner, that they were empty, and harmless. I greatly doubt that well -5, has ever been tested for Toxic Chemicals.

The handful of concerned Citizens that met with you, are very knowlegable about most of Vestals polluted areas. Some have for years, studied, checked, researched, and pleaded for help. A precious few finally succeeded in getting DEC and EPA to help us. We still have much we are concerned about, such as the State spraying near our wells, Chemlawn and similar Companyies spraying Toxic Chemicals on Lawns, which later drain into our water supply, and etc..

Can anyone, DEC, EPA, or whomever keep up with or ahead of all the Toxics being made and spread across our Land? Hopefully the Air Purifer will work, but it is only a band-aid applied to a small area, when a Major Operation should be performed.

The hope that this Country will not succeed in its own self destruction, lies with our Younger Generation. I found new hope, as I listened to you 5 Young Men, who conducted the meeting. Only when the people we elect to Govern us, fully support and work with those trying to solve these problems, will they be corrected. While you are answering questions, recieving critisizism, working under adverse conditions, picture a Drill Sargent, saying, Heads up, chest out, stomach in, Forward March. Good Luck.

Sincerely,
Wannita Kilmer

Wannita Kilmer
804 Circle Dr., N.,
Vestal, N.Y. 13850

phone-607- 785- 5973

(Mrs Roger Kilmer)

After quickly scanning through the Remedial Investigation Report and Feasability Study of Well 1-1 site, I would like to add these comments to the accompanying letter.

Well 5-1 - Dichloroethene - 1985
Well 5-1 - 1986 - adds 5 other Volatiles to the list. Where is it coming from, the River, or other contamination?

Is 5-1 in close enough proximity to Well-1-1, to be taking in the discharge from 1-1 being pumped to waste?

I also feel Cocoanut Creek was ignored in the tests and report. I think further study should be made

In other words should a wider

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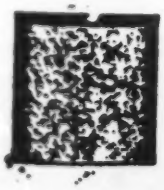
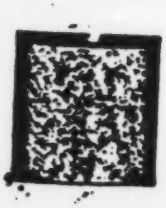


Area be checked?

Also the Citizens who realize the grave importance of the Pollutions, and contacted E.P.A. and DEC, have never had interest. You can most of them at the meeting.

However no County Representative was there, or County Health Representative. No County Supervisor. No Representative State Assemblyman from this District, and no Representative from our State Senatorial District. I consider this a disgrace.

In the small area of Circle Line came 50+ Cancer. 6 the deaths from Cancer, couple treated for Cancer, One unexplained death, due to some kind of poisoning, also Mis-carriages, Heart attacks etc., scares you. Of those living



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in this area from 1970 to 1980, there is something causing this problem. I personally believe the Toxic Chemicals we dumped during that period.

Help!

Juanita Kilmer

TOWN OF VESTAL

605 Vestal Parkway West
Vestal, New York 13850

TELEPHONE - 748-1514
AREA CODE - 607

SUPERVISOR
Rose M. Fairbrother

TOWN COUNCIL
Harold Bennett
Joyce Hochdoerfer
Sandra Tillotson
Frank Valletta

June 18, 1986

Mr. Jeff Brandow, Sr. Sanitary Engineer
DEC
50 Wolff Road
Albany, NY 12233-0001

JUN 20 1986

Dear Mr. Brandow:

The Vestal Town Board has carefully reviewed the "Remedial Investigation Report, Risk Assessment and Feasibility Study for Water Supply Well 1-1 Site, Vestal, New York" as prepared for the New York State Department of Environmental Conservation by Ecology and Environment, Inc. Board members were also present at the Public Hearing held June 10, 1986 in the Vestal Town Hall.

To re-establish the confidence of the residents within the community, emphasis must be to provide safe water with non-detectable levels of contaminants. Residents of Vestal demand quality water.

The Town Board is of the opinion that Well 1-1 should be used as the primary source of supply for the distribution system. By treating Well 1-1, it would prevent further migration of the plume of the contamination and also provide safe drinking water.

The position of the Town Board remains firm in providing water with non-detectable levels of contamination and is convinced that treatment for present and future use of Well 1-1 would be the installation of an Air Stripper and Carbon Adsorption System. Federal and State standards for acceptable levels of contaminants will, in all probability, change and any remedial action to upgrade the requirements must be satisfied.

An air stripping/granular carbon adsorption system is being installed to treat Well 4-2. This well has been pumped to waste since 1980. A remedial action plan was determined through litigation. The concentration of volatile organics in Well 4-2 was less than the levels in Well 1-1. The determination to use the dual system was to be sure the level of contamination is non-detectable, and to provide quality water to the residents of the area.

Installing the Air Stripper/Carbon Adsorption System on Well 1-1 would insure non-detectable levels of contamination, provide the confidence that

residents need, and would be consistent with Well 4-2.

The Town Board also favors a plan to continue the investigation to identify the source of the contamination as a means to protect the aquifer and to prevent the migration of the pollutants.

Air quality was another factor discussed by the Town Board. The Study states that "treatment of the air discharge from the air stripping tower is not anticipated to be necessary" but it was the opinion of a Councilman that all appropriate measures be taken to retain air quality.

The report was very comprehensive, and the Town Board appreciates all that is being done to aid the Town of Vestal to remedy a complex problem. Thank you.

Sincerely,

Rose M. Fairbrother

Rose M. Fairbrother,
Supervisor
Town of Vestal

RMF:mc

SUSQUEHANNA SIERRA

PO Box 572, Endicott, N.Y., 13760

June 18, 1986

RECEIVED

JUN 23 1986

BUREAU OF EASTERN REMEDIAL ACTION
DIVISION OF SOLID & HAZARDOUS WASTE

Jeffrey E. Brandow P.E.
Bureau of Eastern Remedial Action
Division of Solid & Hazardous Waste
50 Wolf Rd.
Albany, N.Y. 12233-0001

RE: Remedial Investigation Report, Risk Assessment and Feasibility Study for Water Supply Well 1-1 site, Vestal, N.Y.

Dear Mr. Brandow,

The Susquehanna Group Sierra Club would like to submit the following comments concerning the Well 1-1 study.

The town of Vestal does not do a full 127 priority pollutant scan on their wells because of the tremendous expense involved and it is not known exactly what pollutants are present at any given time, therefore we strongly recommend combined air stripping and GAC adsorption on Well 1-1. The air stripping would remove the volatile organics we know to be present and the carbon adsorption would polish off any remaining pollutants. GAC would also remove non-volatile organics.

There was concern at the public hearing that the effluent being pumped from Well 1-1 is no longer visible above the water surface to ease the public's mind that Well 1-1 is continually pumping to waste to protect the integrity of working wells 1-2 and 1-3. The chemicals in the effluent would receive further aeration and treatment above the water surface. The people are worried that there may be an electrical or pump failure. On a previous occasion the well pumping was shut off for a period of three weeks. (Sept. 18, 1980 clipping attached.) If this visual pumping would cause a safety problem, hazard signs could be posted in the area. It is a common sight to see people fishing in the discharge area. Perhaps posting of signs is a necessity to protect public health and welfare. Are these fish safe to consume?

Well 1-3 is thought to recharge from the river. Isn't it possible that the discharge from Well 1-1 pumping to waste could show up in 1-3? Where is the trans, 1,2 dichloroethylene coming from in Well 1-3? Where is the chemical soup coming from in Well 5-1? (last page in your report) (1-3 data on page 1-12).

In aerial contamination maps of volatile organics, trichloroethylene, 1,1,1-trichloroethane, toluene, benzene, etc. are appearing in close proximity to Wells 1-2 and 1-3. There could possibly be a correlation between the present Dept. of Environmental Conservation/Rodriguez restaurant gasoline investigation and some of this contamination. Perhaps these two

investigations should be combined.

Further investigation is necessary to pinpoint the source and find the responsible party or parties.

The public information hearing was most informative and we thank you for the privilege of commenting.

Yours truly,

Vivian Stevens

Vivian Stevens, Chairman
Susquehanna Group Sierra Club
820 North Circle Drive
Vestal, New York 13850

(607) 748-9865

Well pumping resumes after halt

By PAUL SHUKOVSKY

A highly-polluted Vestal municipal well that is supposed to be continually pumping water into the Susquehanna River to prevent the spread of pollution to two other nearby town wells was shut off for more than three weeks before pumping resumed Wednesday.

Vestal well 1-1, located just off North Main Street and Stage Road near the Vestal-Endicott bridge, has been called one of the most polluted wells in New York, by state officials.

Well 1-1 has been out of service since June, 1980, when the extensive chemical pollution became known. In an effort to keep the pocket of pollution from spreading throughout the groundwater in the area, water is being pumped from the well into the Susquehanna River, said Tom Goettel, Vestal Town engineer.

The well pump was turned off Aug. 24 when a state Department of Environmental Conservation regional flood control engineer discovered that water being pumped from the well had seriously eroded the levee along the Susquehanna River.

"I was deathly afraid that the whole levee would slip," said flood control engineer Henry Carroll.

Carroll asked that the Well 1-1 pump be shut off until the levee could be repaired by Vestal's water department.

Carroll said yesterday that the levee was repaired to his satisfaction, within a week of his request.

But it took Vestal officials two more weeks to put the necessary pipe for the pump outflow into place and turn the pump back on.

Dr. Katherine Gaffney, Broome County's acting health commissioner, expressed concern about the possible spread of pollution to the two other Vestal municipal wells nearby.

She said that Vestal officials were told that the county expected them to test the wells to check for a spread of pollution.

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CONSERVATION ADVISORY COMMISSION

June 19, 1986

Jeffrey E. Brandow, P.E.
Bureau of Eastern Remedial Action
Division of Solid and Hazardous Waste
50 Wolf Rd.
Albany, N.Y. 12233-0001

Dear Mr. Brandow:

The Vestal Conservation Advisory Commission wishes to make the following comments on the NYSDEC/USEPA Remedial Investigation Report, Risk Assessment, and Feasibility Study for Water Supply Well 1-1 Site, Vestal, N.Y.

It is reassuring to learn that the prompt action taken by Vestal officials in shutting Well 1-1 off from the Vestal mains and pumping it to waste has not only protected the aquifer supplying Wells 1-2 and 1-3 from degradation by the contamination affecting Well 1-1 but has also substantially lowered levels of pollutants in that part of the aquifer which supplies water to Well 1-1.

As regards the problem of assuring an adequate backup supply for Water District 1, the Vestal Conservation strongly supports the position taken by Town of Vestal officials that air stripping of water from Well 1-1 should be followed by treatment with granulated activated charcoal. As Richard Pastore, a CAC member, pointed out in the hearing on June 10, 1986, air stripping may remove 99% of the total volatile organics, but when TVO levels in water from Well 1-1 are at 241 ppb (p. 3), the 1% of TVO not removed by air stripping translates to 2.4 ppb TVO. Risk projections for TCA and TCE (both substances found in water from Well 1-1) indicate that these substances may be hazardous at very low levels (pp. 3-4, 3-6). In view of public sensitivity to such risks, it is clearly desirable to treat water from Well 1-1 with GAC to remove any volatile organics remaining after air stripping. GAC treatment will also remove other pollutants (some not tested for but possibly present) not completely removed by air stripping.

The Report raises a number of other questions which the CAC feels must be answered.

1. We are concerned about traces of contaminants (including benzene, a known carcinogen) found in water from monitoring wells 1-20 and 1-22 (see table on p. B-13 and Figure F-7). These wells

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lie within the drawdown area for Vestal Well 1-2 (see Figure 1-4), and it appears that contaminants are being pulled in from a source of pollution lying to the east. Well 1-2 is at present the only dependable source for Vestal Water District #1. It is very important that contamination in this area be investigated as soon as possible and that remedial measures be taken if necessary, so that this water source is not jeopardized.

2. We are concerned about high levels of chloroform appearing suddenly in water samples from Well 5-1. One ppb of 1,1-Dichloroethane was noted in samples taken on November 8, 1985, and analyzed on November 21, 1985. However, samples taken on March 12, 1986 (analyzed on April 6, 1986) show 7 ppb of chloroform, 1 ppb of benzene, 1 ppb of toluene, and 1 ppb of chlorobenzene, along with 2 ppb of methylene chloride. Ron Slotkin of the Broome County Health Department tells us he knows of no incident which might have caused this abrupt rise. The CAC feels that this report should be rechecked immediately, with new sampling of water from Well 5-1 if necessary, so that immediate measures may be taken if contamination is substantiated.

The Vestal CAC wishes to express its appreciation to the Department of Environmental Conservation and Ecology and Environment, Inc. for the thoroughness of this study and the clarity of its presentation. These are not always virtues found in consultants' reports. The CAC hopes that this Report will quickly be followed by remedial action, so as to eliminate possible problems caused for residents of Vestal by breakdown or contamination of Well 1-2 or contamination of Well 5-1.

Sincerely,

Virginia Oggins

Vivian Stevens

Virginia Oggins, for the Vestal Conservation Advisory Commission
Vivian Stevens, Chairman, Vestal Conservation Advisory Commission